

Notice of Allowability

Application No.

10/671,849

Applicant(s)

JIAO ET AL.

Examiner

Antonio A. Caschera

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the after-final amendment filed 09/25/06.
2. ☒ The allowed claim(s) is/are 3,5 and 7-22.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

Allowable Subject Matter

1. Claims 3, 5 and 7-22 are allowed.

The following is an examiner's statement of reasons for allowance:

In reference to claim 3, the prior art of record (Brown (U.S. Pub 2003/0210251 A1), Kuchkuda et al. (U.S. Patent 5,872,902), Wada (U.S. Patent 6,847,375 B2) and Michail et al. (U.S. Patent 6,954,211 B2)) does not explicitly disclose wherein the step of expanding the edge of the line segment includes altering the equation of $ax+by+c=0$ by adding an amount $(|a|+|b|)/2$ to the c parameter of the equation, where a, b and c are coefficients from the equation $ax+by+c=0$, in combination with the further limitations of claim 3.

In reference to claim 5, the prior art of record (Brown (U.S. Pub 2003/0210251 A1), Kuchkuda et al. (U.S. Patent 5,872,902), Wada (U.S. Patent 6,847,375 B2) and Michail et al. (U.S. Patent 6,954,211 B2)) does not explicitly disclose wherein evaluating the expanded line segment computing $ax_0+by_0+c+(|a|+|b|)/2=0$, where a, b and c are coefficients from the equation $ax+by+c=0$, in combination with the further limitations of claim 5.

In reference to claim 7, the prior art of record (Brown (U.S. Pub 2003/0210251 A1), Kuchkuda et al. (U.S. Patent 5,872,902), Wada (U.S. Patent 6,847,375 B2) and Michail et al. (U.S. Patent 6,954,211 B2)) does not explicitly disclose the line segment having a slope factor related to the slope of the line segment and a parameter proportional to an x distance between an edge of the line segment traversing a pixel and a pixel boundary, wherein an edge of the line

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segment traverses a partially covered pixel so as to define a triangular area, in combination with the further limitations of claim 7.

In reference to claim 8, claim 8 depends upon allowable claim 7 and therefore is also deemed allowable.

In reference to claim 9, the prior art of record (Brown (U.S. Pub 2003/0210251 A1), Kuchkuda et al. (U.S. Patent 5,872,902), Wada (U.S. Patent 6,847,375 B2) and Michail et al. (U.S. Patent 6,954,211 B2)) does not explicitly disclose determining the area covered by an edge of the line segment traversing through a partially covered pixel by determining whether the area is greater than a predetermined limit, computing a maximum triangular area covered by the line segment, computing an area of a parallelogram covered by the line segment and then summing the two areas, in combination with the further limitations of claim 9 and claim 1, from which claim 9 depends upon.

In reference to claims 10-15, claims 10-15 depend upon allowable claim 9 and are therefore also allowable.

In reference to claim 16, the prior art of record (Brown (U.S. Pub 2003/0210251 A1), Kuchkuda et al. (U.S. Patent 5,872,902), Wada (U.S. Patent 6,847,375 B2) and Michail et al. (U.S. Patent 6,954,211 B2)) does not explicitly disclose wherein computing an area of partially covered pixels includes computing the difference between unity and the triangular area not covered, to find the area of the pixel, in combination with the further limitations of claim 16.

In reference to claims 17 and 18, claims 17 and 18 depend upon allowable claim 16 and are therefore also allowable.

In reference to claim 19, the prior art of record (Brown (U.S. Pub 2003/0210251 A1), Kuchkuda et al. (U.S. Patent 5,872,902), Wada (U.S. Patent 6,847,375 B2) and Michail et al. (U.S. Patent 6,954,211 B2)) does not explicitly disclose computing a first area of the pixel not covered by the first parallel edge, a second area of the pixel not covered by the second edge and summing the first and second areas then subtracting the sum from one, in combination with the further limitations of claim 1, from which claim 19 depends upon.

In reference to claim 20, the prior art of record (Brown (U.S. Pub 2003/0210251 A1), Kuchkuda et al. (U.S. Patent 5,872,902), Wada (U.S. Patent 6,847,375 B2) and Michail et al. (U.S. Patent 6,954,211 B2)) does not explicitly disclose computing a first area of the pixel not covered by the first parallel edge and subtracting it from one forming a first difference, computing a second area of the pixel not covered by the second parallel edge forming a second difference and forming a product of the first and second differences, in combination with the claim limitations of claim 1, from which claim 20 depends upon.

In reference to claim 21, the prior art of record (Brown (U.S. Pub 2003/0210251 A1), Kuchkuda et al. (U.S. Patent 5,872,902), Wada (U.S. Patent 6,847,375 B2) and Michail et al. (U.S. Patent 6,954,211 B2)) does not explicitly disclose computing a first area of the pixel not covered by the first parallel edge, a second area of the pixel not covered by the second edge and summing the first and second areas then subtracting the sum from one, in combination with the further limitations of claim 21.

In reference to claim 22, the prior art of record (Brown (U.S. Pub 2003/0210251 A1), Kuchkuda et al. (U.S. Patent 5,872,902), Wada (U.S. Patent 6,847,375 B2) and Michail et al. (U.S. Patent 6,954,211 B2)) does not explicitly disclose computing a first area of the pixel not

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covered by the first parallel edge and subtracting it from one forming a first difference, computing a second area of the pixel not covered by the second parallel edge forming a second difference and forming a product of the first and second differences, in combination with the claim limitations of claim 22.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

2. The cancellation of claims 1, 2, 4, 6 and 23-28 is noted.
3. Applicant's arguments, see page 11 of Applicant's Remarks, filed 08/22/06, with respect to the objection of claims 13 and 18 have been fully considered and are persuasive. The objection of claims 13 and 18 has been withdrawn since minor informalities have been corrected for.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Antonio Caschera whose telephone number is (571) 272-7781. The examiner can normally be reached Monday-Thursday and alternate Fridays between 7:00 AM and 4:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung, can be reached at (571) 272-7794.

Any response to this action should be mailed to:


Commissioner of Patents and Trademarks

Washington, D.C. 20231

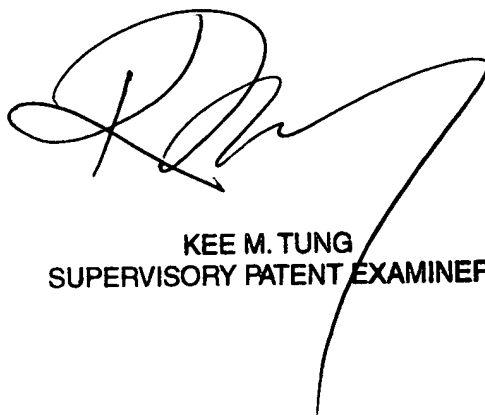
or faxed to:

571-273-8300 (Central Fax)

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (571) 272-2600.

aac

9/28/06

PATENT EXAMINER



KEE M. TUNG
SUPERVISORY PATENT EXAMINER